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NORMANDY.

[Farmer of Normandy.]

IN consequence of the intimate connexion which subsisted between England and Normandy during the long period in which they were united under the same crown, the usages and manner of life of the present inhabitants of that province seem to have peculiar claims upon our attention. These claims are the stronger as it happens that they are a very primitive race, attached to old habits, old costumes, and all old things. This might enable us to discover circumstances in Normandy to which the origin of similar things in England may be traced, and other circumstances which the influence or example of England may have operated in producing. It is a pity that sojourners and travellers in Normandy have not furnished materials by which this most interesting view of the subject might be elucidated. They have however supplied a mass of information, some points of which may advantageously occupy three or four articles in the 'Penny Magazine,' each of which will be illustrated by a wood-cut.

Normandy is a country which in its general features has often been compared to England; and certainly there are sufficient points of resemblance to justify the comparison. The comparison holds in respect of climate, in the extent of undulating plains with few mountains, in the excellence of the pasture, and in common vegetable products. The climate of Normandy is rather drier, and has a little more warmth and steadiness of atmosphere, than that of England; but the same winds prevail, and produce the same effects, and the seasons are nearly similar. Agriculture is, however, in a comparatively backward condition, from the want of capital and the absence of improving example, rather than from any lack of ingenuity in the cultivator. The farms are small, and a much larger proportion of the population is dispersed over the country in small villages and petty places than in England.

The villages are mostly situated in bottoms, the cottages being built with mud and covered with thatch. In the great towns most of the houses are of wood and plaster. A great deal of timber runs upwards, downwards, and cross wise; the first story of the building projecting over the ground-floor, and the second-floor over the first, the roof being pointed with large stacks

of brick chimneys at each end. A traveller, who was in Normandy about eighty years since, makes a remark upon these houses which is worth transcribing: "Many of their old houses, when they are pulled down, have a great deal of chestnut-wood about them; and as there are no forests of chestnut-trees in Normandy, the inhabitants have a tradition that this wood was brought from England, and there are some circumstances which, when rightly considered, add strength to this tradition. Many of the old houses in England contain a great deal of this kind of timber. Several of the old houses in London, particularly the Black Swan Inn in Holborn, situated near Fetter Lane end, (which exceedingly resembles the houses in Normandy,) and many others in the neighbourhood; and most of the ancient houses in Cheshunt, in Hertfordshire, so named, as some etymologists tell us, from the quantity of chestnut-trees in that place, are built of this wood. There are also some woods and woody places in England called Chestnut-wood, particularly one near Sittingbourne in Kent, although no wood is now growing there. Many houses in Hertfordshire, Rutlandshire, and other counties of England, are of the same kind in figure and materials; and indeed Normandy does so nearly resemble Old England that the English traveller could scarce believe himself to be in France*." Time has diminished this resemblance, so far as the houses are concerned; for while houses continue to be built in Normandy as in former times, similar buildings of wood and plaster, with projecting stories are rapidly disappearing from our own towns, although a few still survive in London, and some in the older provincial towns. A variety of the same species of house is mentioned by Mr. Dawson Turner. It consists of a frame-work of wood, with the interstices filled up with clay, in which are imbedded small pieces of glass, disposed in rows, for windows. The wooden sheds are preserved from the weather by slates, laid one over the other like the scales of a fish, along their whole surface, or occasionally by wood over wood in the same manner. At one end the roof projects four or five feet beyond the gable, in order to protect a doorway and ladder, or staircase, that leads to it; and this elevation has a very picturesque effect. A series of villages, composed of cottages of this description, occur on the road from Yvetot to Rouen, and may be seen in other parts. The gentry usually occupy houses of stone in the towns, such things as country-seats being rarely seen.

The farms, as already intimated, are rarely large, scarcely ever exceeding 100 acres. The buildings attached to the dwelling-houses on a farm are very extensive, as neither corn nor hay are ever stacked out of doors; but they are very indifferently built. The implements of agriculture are in a very primitive state; the ploughs are heavy, the harrows continue to have wooden teeth, the threshing-machine is not known, and the fan for winnowing corn has only partially been introduced. Nothing can be more simple than the mode of life at these farm-houses, and among the labouring population at large. Their food is bread, a few vegetables, and cider. Animal-food is never or very rarely used; but coffee and treacle are among the articles which they consume. The dress of the rural population is exceedingly plain, and has an antiquated appearance. This is true also of all the various classes of the population, except the gentry and affluent citizens, who live and dress much in the same way as Parisians of the same rank in life. Some of the peculiar costumes of the province will hereafter claim our notice more particularly.

Having mentioned cider as a common beverage, we may add that apple-trees are extensively planted in this province, both sides of the road being frequently lined with orchards for miles together. The plantations are generally in large open fields, in which the trees grow about fifteen feet apart. "The apple-tree and pear-tree in Normandy," says Mr. Turner, "far from being ugly, and distorted and stunted in their growth, as is commonly seen in England, are trees of great beauty, and of extreme luxuriance, both in foliage and ramification. The *Coccus*, too, which has caused so much destruction among our orchards, is still fortunately unknown here." The cider of Normandy is famous throughout France. It is chiefly produced in the western portion of the province, where scarcely any other beverage is used by the lower classes of the inhabitants. The cider of the first pressing is of a strong quality, but that of the second pressing is much inferior. The cider does not seem to be much relished by English travellers, who, however, are by no means agreed in the grounds of their distaste.

Another common object of cultivation in Normandy is flax. There are few farmers who do not raise more or less of it upon their grounds; and they get it carried through the different processes of manufacture by their family on their own premises. A stock of linen thus manufactured in general forms the chief portion, if not the whole, of a young woman's dowry; and it is therefore a great object with unmarried girls to accumulate as large a stock of it as they possibly can. This linen is of a coarse and strong quality, and forms the most general branch of manufacture in Normandy. Lace also is an important object of manufacture, and gives employment to a great proportion of the female population in different parts of the province. Men and women in Normandy generally marry young; but they never do so till they are in some regular employment. A labourer earns on an average 24*l.* a-year, on which he can subsist comfortably, according to his own ideas of comfort. If he has a wife and two children (say fourteen and eleven years of age respectively) able to work, he may get about 40*l.* a-year; these sums being understood to include every advantage and opportunity for making money which his situation affords.

Normandy is celebrated in France for its cattle; which is no doubt owing to the superiority of its pasture. The horses are of small size, with long tails, which are never docked; their strength is much greater than might be expected from their size. The asses and mules are larger than ours. The cows are small; but give a good supply of milk. Oxen are generally employed in ploughing. Sheep are abundant, and their flesh is good. Turner says, "Throughout this part of France, large flocks of sheep are commonly seen in the vicinity of the sea, and as the pastures are uninclosed, they are all regularly guarded by a shepherd and his black dog, whose activity cannot fail to be a subject of admiration. He is always on the alert and attentive to his business, skirting his flock to keep them from straggling, and that apparently without any directions from his master. In the night they are folded upon the ploughed land, and the shepherd lodges, like a Tartar in his *kibitka*, in a small cart, roofed and fitted up with doors."

Normandy supplies Paris with great quantities of cattle, corn, butter, and cider, as well as with its manufactures. Its extensive communications with the capital are carried on exclusively by land-carriage. The high roads, being kept in repair at the expense of the government, are broad and in good condition, being paved wherever the boggy character of the ground renders it expedient; but the bye-roads are here, as in other parts of France, in a very wretched condition, being very seldom repaired. The English eye, which is seldom easily pleased, is apt to be dissatisfied at the general absence of the hedge-rows which in England line the roads and separate the fields. The extensive fisheries on the coast not only

* Tour in Normandy, 1754.

supply the wants of the province in fish, but leave a large surplus which is constantly transmitted to Paris in light carts that travel night and day. The habits and character of that extraordinary and simple race of fishermen who inhabit the suburbs of Pollet, near Dieppe, will require our notice on an early occasion.

THE SAPPHIRE GROT.

(*From Dr. Hogg's Visit to Alexandria, Damascus, &c.*, vol i., p. 18.)

In the 147th Number of our Magazine we gave a description of the island of Capri, and of the remarkable natural grotto that has been discovered there. That account was written by a gentleman who had frequently visited the island, but as the grotto was unknown in his time, he took a short description of it from Mrs. Starke's useful 'Guide to Travellers in Italy.' A fuller account has just appeared, and as the subject is interesting, (the grotto attracting many visiters to Capri who never thought of going there before,) and as the author has given a clear explanation of the phenomenon, we extract the passage for the benefit of our readers.

"The sapphire grot at the northern extremity of the island of Capri having only been lately re-discovered, of course excites considerable attention. The sole entrance to this remarkable cavern is a small semicircular opening, close to the edge of the water, at the base of an almost perpendicular cliff, which dips from a great height into the sea. In form it closely resembles the mouth of an oven, which it exceeds but little in size; yet immediately within it enlarges into a grotto of considerable dimensions, with an arched roof that spans, like a dome, a placid expanse of water of the deepest azure. A signal being made, a long narrow boat, specially constructed to convey visiters within the cave, pushes from the shore; but the entrance can only be effected when the weather is perfectly calm, and at the favourable moment of the reflux of the waves. The visiter now places himself below the edge of the boat, which two guides adroitly and speedily conduct through the narrow passage. He then finds himself in a spacious circular cavern, into which the direct rays of light only penetrate through the aperture by which he has entered; and this not being more than four feet either in height or breadth, the space within would be a mere gloomy and obscure recess, were it not distinguished from all other known caverns by the peculiarity which has conferred upon it the name of the Sapphire Grot. To understand this it must be remembered, that the entrance to this singular cave is to be considered as the apex of a subaqueous arch, springing on one side from the bottom of the sea, and on the other from a ledge of rock near the surface of the water. Thus the greater part of the light within is derived from the rays that pass through the blue waters of the surrounding ocean. By this denser medium some of these rays are intercepted and absorbed, while the remainder, refracted by passing through the water, and then reflected upwards from the bottom, diffuse a rich blue colour over the roof and sides of this beautiful grotto, which is finely varied in appearance by the direct rays that pass through the entrance, as they fall on the undulating surface of the waves within.

"The singular effect of light thus passing through an aqueous medium is here further illustrated by the shadow of the boat being thrown upon the roof of the cave, as well as by an experiment, easily made, of closing entirely the entrance of the grot, which increases the intensity of the rich cerulean tints that so conspicuously distinguish it. That portion of the cave which is filled by the sea, does not possess a width of perhaps more than seventy or eighty feet, yet the imagination is so powerfully aided by the blue aërial perspective, that it requires a positive exertion of the reasoning faculty to form a correct estimate of its real dimensions.

"At the farthest extremity of the cavern, a wide and shelving portion of rock affords a convenient landing-place, beyond which are some vestiges of steps. These appear to lead to the termination of a subterraneous entrance from the island, now obstructed with rubbish, and hitherto unexplored, as it cannot be supposed that the present opening to this remarkable grotto escaped the notice of the ancients, or that the imperial voluptuary, who sought with such avidity new sources of enjoyment, neglected, during his long residence here, the advantages presented by a cavern apparently designed by nature to contribute to royal luxury."

SEA TERMS.

(*From the Journal of a West India Proprietor, by M. G. Lewis.*)

Windward, from whence the wind blows;
Leeward, to which the wind blows;
Starboard, the *right* of the stern;
Larboard, the *left* of the stern;
Starboard helm when you go to the left; but when to the right, instead of larboard helm, *helm a-port*;
Luff you may, go nearer to the wind;
Theis (*thus*), you are near enough;
Luff no near, you are too near the wind;
The *tiller*, the handle of the rudder;
The *capstan*, the weigher of the anchor;
The *buntlines*, the ropes which move the body of the sail, the *bunt* being the body.
The *bowlines*, those which spread out the sails and make them swell.
Ratlines, the rope ladders by which the sailors climb the shrouds;
The *companion*, the cabin-head;
Reefs, the divisions by which the sails are contracted;
Stunsails, additional sails, spread for the purpose of catching all the wind possible;
The *fore-mast, main-mast, mizen-mast*;
Fore, the head;
Aft, the stern;
Being pooped, having the stern beat in by the sea;
To belay a rope, to fasten it.
The *sheets*, a term for various ropes;
The *halyards*, ropes which extend the top-sails.
The *painter*, the rope which fastens the boat to the vessel.

Tests of Folly.—Æneas Sylvius, amongst many others, sets down three special ways to find a fool by. He is a fool that seeks that he cannot find: he is a fool that seeks that, which, being found, will do him more harm than good: he is a fool that having variety of ways to bring him to his journey's end, takes that which is worst. "If so," says Burton, "methinks most men are fools." The first test, however, is a very bad one, in our opinion; for how is a man to know that a thing is not to be found until he has sought for it; and a man in seeking what is not to be found, often finds something as good or better than that which he sought.

Anxiety of a Mother for the Education of her Children.—The truth of the following anecdote comes within my personal knowledge. A few years ago a poor woman, in a small village on the west coast of Scotland, was, by her husband's death, left dependent on her own exertions for the support of herself and four children, the eldest of whom was about eleven years of age. Unable to bear the expense of educating each in the customary way, and yet eager that they should be instructed, she bargained with the village schoolmaster that for the price of teaching one, he would allow two to attend the school alternately, one on the one day, and the other the next; by this ingenious device she procured for both of them the invaluable blessing of education, and furnished a striking instance of the honourable shifts by which the poor can acquire for themselves advantages which are seemingly beyond their attainment.—*Duncan's Travels through Part of the United States and Canada.*

THE 'ROSE-GARDEN' OF SAADI

[The Dog and the Shadow.]

HAVING, on a previous occasion, noticed the history of the fables of Bidpai, in Persia, it does not seem desirable to proceed to the apologues of another country until we have noticed that extraordinary and characteristic collection of poetry and prose,—of fables, tales, and apophthegms,—called the *Gulistan*, or 'Rose-garden;'—a work which is intensely admired wherever the Persian language is spoken, and which is known far beyond the limits of that tongue, having been translated into various European languages, and, among the rest, into our own. We have a complete translation by Mr. Gladwin, and translations of parts by various hands. The author seems to have been conscious that his work was destined to last. After having alluded to the fact that the physical rose-garden is of transitory duration, he says—"I am able to form a book of roses which will delight the beholders, and gratify all who are present; whose leaves the tyrannic arm of the autumnal blasts can never affect, nor injure the blossoms of its spring. What benefit will you derive from a basket of flowers? Carry a leaf from my garden. A rose may continue in bloom for five or six days, but this rose-garden will flourish for ever."

In an European author, this would not be a modest appreciation of his own powers; but modesty is not a virtue expected in an Oriental author; and in this instance the merit of the work, combined with the fact of its continued and increasing popularity after a lapse of more than six centuries, seems sufficiently to warrant the terms in which he speaks of his own production. The work consists of a great number of tales, fables, and conversational anecdotes, many of which are very fine, and all written with exquisite beauty of language, to which no translation can do justice. These are profusely interspersed with beautiful maxims and admirable moral precepts, mostly conveyed in verse; giving to the whole the semblance of one of those rich and beautiful mosaics which are numbered among the most exquisite productions of Persian art.

The name of the author was Saadi, a native of the city of Sheeraz. There is no literary name in this country—not even that of Shakspeare—the popularity of which admits of the least comparison with that of this author in Persia. His name and his sayings are as household words throughout the nation—from the king on his throne to the muleteer by the wayside. The latter in answering your remonstrances, and even the beggar in soliciting alms, will give utterance to some appropriate passage from the Gulistan; and probably would, if he were asked,—and will often without asking,—repeat verbatim the stories and anecdotes which it contains. In fact, to be instructed in this work forms an essential part of education; and even those without education contrive to get their memories stored with choice passages from this moralist, and from the lyrical poet Hafiz. There is no estimating the degree of influence which this practice has had in preserving some degree of refinement and right feeling in Persia throughout all the barbarous and debasing circumstances with which its history is replete; and there is no question that the intimate acquaintance which the princes of that country are made to form very early in life with the often bold and honest-morality of Saadi, has had much effect in subduing the natural intoxication of absolute power, and in softening that hardness of character and feeling which it is calculated to produce. It is only in such a country as Persia that the influence of such an author as Saadi, and of such a work as the Gulistan, can be well estimated; and it is perhaps only in such a country that the same degree of influence could have been acquired.

Our space will not at present allow us to notice the

personal history of Saadi, which is curious and interesting.

The Gulistan is divided into eight chapters, on the following subjects:—1. On the morals of kings. 2. On the morals of dervises. 3. On the excellency of contentment. 4. On the advantages of taciturnity. 5. On love and youth. 6. On imbecility and old age. 7. On the effects of education. 8. Rules for conduct in life.

In furnishing a few extracts from the translations of the Gulistan, it is necessary to premise that the verse of the original is included in the prose of the translation, without being distinguished from it. It is no small merit of Saadi, that his style, although sufficiently ornamented, is simplicity itself, compared with that highly embellished accumulation of figurative expressions, which is considered in Persia at the present day as the crowning merit of literary composition. The following apologue, on the benefit of good society, may be quoted as a fine illustration of the simplicity we mention.

"One day as I was in the bath, a friend of mine put into my hand a piece of scented clay. I took it, and said to it, 'Art thou musk or ambergris, for I am charmed with thy perfume?' It answered, 'I was a despicable piece of clay, but I was some time in the company of the rose, and the quality of my sweet companion was communicated me; otherwise I should only be a bit of clay, as I appear to be.'"

The following story is also related in the histories of the great and wise monarch to whom it relates, and seems with other instances to show that Saadi collected his anecdotes and illustrations from all quarters, —from reading, from personal experience, and from imagination. The value of the lesson it inculcates will be well understood by those who are acquainted with the actual state of Persia, the practices against which it is levelled being still but too prevalent.

"It is related that Nousheerwan, being at a hunting-seat, was about to have some game dressed, and as there was not any salt, a servant was sent to fetch some from a village; and the monarch ordered him to pay the price of the salt, that the exaction might not become a custom, and the village be desolated. They say unto him, 'From this trifle what injury can arise?' He replied, 'Oppression was brought into the world from small beginnings, which every new comer has increased, until it has reached the present degree of enormity. If the monarch were to eat a single apple from the garden, the servants would pull up the tree by the roots; and if the sultan orders five eggs to be taken by force, his soldiers will spit a thousand fowls. The iniquitous tyrant remaineth not, but the curses of mankind rest on him for ever.'"

This was bold in such a country as Persia, and there are much bolder things than this in the Gulistan. The following is from the same chapter. It will in some degree account for the feelings of the Persian slave to recollect that the Persians almost universally regard the sea with dread and aversion.

"A king was sitting in a vessel with a Persian slave. The boy having never before seen the sea, nor experienced the inconvenience of a ship, began to cry and lament, and his whole body was in a tremor. Notwithstanding all the soothings that were offered he would not be pacified. The king's diversion was interrupted, and no remedy could be found. A philosopher who was in the ship, said, 'If you will command me, I will silence him.' The king replied, 'It will be an act of great kindness.' The philosopher ordered them to throw the lad into the sea, and, after several plunges, they laid hold of the hair of his head, and dragging him towards the ship, he clung to the rudder with both his hands. When he got out of the water he sat down quietly in a corner of the vessel. The king was pleased, and asked how this was brought about. The philosopher replied, 'At first he had never experienced the danger of being drowned; neither knew he the safety of a ship.' In like manner, he knoweth the value of prosperity who hath encountered adversity. O thou who hast satisfied thine hunger, to thee a barley-loaf is beneath notice; that seems loveliness to me which in thy sight appears deformity. To the nymphs of paradise purgatory would be hell; but ask the inhabitants of hell whether purgatory is not paradise."

The next, which is from the second chapter, conveys a very useful lesson, and is also interesting for the personal anecdote it contains.

"I remember that in the time of childhood, I was very religious: I rose in the night, was punctual in the performance of my devotions, and abstinent. One night I had been sitting in the presence of my father, not having closed my eyes during the whole time, and with the holy Koran in my embrace, whilst numbers around us were asleep. I said to my father,—'Not one of these lifteth up his head to perform his genuflexions; but they are all so fast asleep that you would say they are dead.' He replied, 'Life of your father, it were better if thou also wert asleep than to be searching out the faults of mankind. The boaster sees nothing but himself, having a veil of conceit before his eyes. If he was endowed with an eye capable of discerning God, he would not discover any person weaker than himself.'"

Our next extract is from the third chapter, on Contentment. The lesson it teaches is one of those universal truths which every man under the sun might study with advantage.

"They asked Hatim Tai if he had ever seen or heard of any person more noble-minded than himself. He replied:—'One day, after having sacrificed forty camels, I went along with an Arab chief to the skirt of a desert, where I saw a labourer who had made up a bundle of thorns. I asked him why he did not go to the feast of Hatim Tai, to whose table people were repairing in crowds? He answered, 'Whosoever eateth bread from his own labour will not submit to be under obligation to Hatim Tai.' I considered this man as my superior in generosity and liberality."

Our next extract is from the sixth chapter, and, like a former passage, contains a personal anecdote equally candid with that containing the reproof which Saadi received from his father. In this he is feelingly reproved by his mother.

"One day, through the ignorance of youth, I spoke sharply to my mother, which vexing her to the heart, she sat down in a corner and wept, saying, 'Have you forgotten all the trouble that you gave me in infancy that you treat me with this unkindness? What a good saying was that of an old woman to her son, when she saw him able to subdue a tiger, having the strength of an elephant!—If you had but recollected your time of childhood, when you lay helpless in my arms, you would not treat me with violence, now that you have the strength of a lion, and I am an old woman.'"

The following tale is often quoted by the Persians, and the reason for this must be found in the frequent occasion there must be in daily life to inculcate the moral and make the application:—

"A little man, being struck with a pain in his eyes, went to a farrier, desiring him to apply a remedy. The farrier applying to his eyes what he used to administer to quadrupeds, the man became blind, upon which he complained to the magistrate. The magistrate said, 'Get away; there is no plea for the damages; for if this fellow had not been an ass, he would not have applied to the farrier.' The application of this story is, that whoever employs an inexperienced person on a

weighty matter, besides suffering repentance, will, in the opinion of the wise, be considered of a weak understanding. The wise man, of enlightened mind, intrusts not an important business to one of mean abilities. The mat-maker, although a weaver, yet is not employed in the silk-manufactory."

The eighth and last chapter consists chiefly of miscellaneous advices, which would not well come under the previous heads. We can only quote from this part the following anecdote, which affords a pleasing illustration of the docility and prudence of the camel.

"It is well known that if a child lays hold of the bridle of a tractable camel he may be led a hundred parasangs without being in the least disobedient: but if the road becomes dangerous and threatens death, and the child, through ignorance, wants the camel to go that way, he slips the bridle out of his hand, and will not obey him any longer; because in the time of danger courteousness is a crime."

These extracts will serve to give the readers of the 'Penny Magazine' some idea of the character of one of the principal classical works of the Persian nation, than which there is probably no work in existence which has had a more abiding and active influence in correcting that which is bad, and improving that which is good, in the character and feelings of a people.

Our present wood-cut is an illustration of the well-known and useful fable of the 'Dog and Shadow.' We give the quaint old version which we find in the edition of 1658.

"He that coveteth other men's goods, he often loseth his own: whereof Esop relateth this fable. In time past there was a dog which went over a bridge, and held in his mouth a piece of flesh: and as he passed over the bridge he beheld the shadow of his own self, and of his piece of flesh within the water; and he, thinking that it had been another piece of flesh, forthwith he thought to have taken it; and as he opened his mouth, the flesh fell into the water, and thus he lost it. Right so is it with many an one; for when they think to rob another, they lose that they have of their own."

LITTLE THINGS.

ALTHOUGH this is an apparently insignificant title, yet it embraces a field of such extent and importance, that it may well be approached with diffidence and anxiety. The mind of the writer, however, having been, on many occasions, deeply impressed with the subject, and never having seen it expressly dwelt on by any author, he feels impelled to lay before the readers of the 'Penny Magazine' what has occurred to him in relation thereto.

Things small in themselves are often great in their consequences.—Inattention to this truth has led, especially in less civilized periods, to the ridicule or neglect of many both of the subjects and instruments of knowledge, and to the consequent retardation of the progress of knowledge itself. The smallness and seeming insignificance of the objects of examination appeared to be sufficient reasons for treating them as utterly unavailing towards any useful purpose. The cochineal insect and the silk-worm egg are in themselves insignificant enough, yet are they the source of employment and wealth to multitudes. The same erroneous view of things caused, and still causes, those who employ a portion of their time in attending to such matters to be despised as weak persons by the uneducated and the unreflecting. There is no show, nothing to strike the imagination, about their pursuits. The path to knowledge, however, consists of a long series of slow and painful steps, which must be successively trodden. The brightest achievements of science—those which arrest the attention of the most careless and uncultivated—are the offspring of slight observations recorded in the course of centuries—of failures and even of errors innumerable. Such, indeed, is the condition and imperfection of the human mind, that even the most absurd views and opinions have frequently led to the discovery of highly important truths, while solemn and imposing systems, fair enough to look upon, have served only to lengthen the reign of error. Witness the labours of the alchemists in search of the philosopher's stone; labours insane in themselves, but which through the incidental, though at the time disregarded, discovery of many truths relating to the nature and properties of substances, have become the parents of modern chemistry with all its wonderful power. On the other hand, one of the great impeding causes of the progress of science and true philosophy was the neglect of *little things*—a neglect of the observation of humble facts, and substituting in lieu of them regularly-built systems, becoming "the dignity of human nature," as was said. The great characteristic of modern philosophy, and that by an attention to which knowledge has in our own times made such rapid progress, is a zeal in collecting facts, and a determination to deduce theories from them, instead of adapting facts to ready-framed theories. All the great improvers of science have been distinguished by a vast faculty of observation. Newton was pre-emihently so. The story of the falling apple will be readily recollected.

In perusing a modern work of credit on any branch of knowledge, we are struck with the clearness of statement, with the accumulation of facts brought to bear on the subject, in short, with the general luminousness and utility of the treatise. For a few shillings we obtain an inestimable practical guide. Towards this result the labours of 100,000 individuals probably have contributed, from the humble collector of weeds by the wayside to the ablest professor in the highest walk; and these, too, extended through a period of many ages. Could the whole long-continued process by which such a work has been at last produced be at a glance placed before the mind's eye, we should be overwhelmed with astonishment, and penetrated with regret and shame if we have been hitherto numbered among the deriders of *little things*. The same may be said of the great results of science and art. Could the progress of any science, now far advanced towards perfection, be traced backwards, the multitude of small and gradual accessions, and the trivial occasions of many of them, would confound the most reflecting.

Every one can feel both surprise and admiration at witnessing the progress of a steam-vessel advancing rapidly against the opposing forces of both wind and tide; yet there are few who duly appreciate observations such as that which gave the first hint of the mighty power of steam, namely, plunging into cold water an inverted bottle, (which had been just emptied of wine, and then by chance placed very near the fire,) from which steam was then observed to issue. Many a present admirer of the steam-vessel would laugh at the observer of any similar fact. Steam, however, is but one—the principal, no doubt—among the many requisites for such an admirable machine. The ship-builder, the iron-founder, the cordage-manufacturer, the growers of timber and hemp, the navigator, in short a countless list of contributors might be named, whose services are indispensable, and an improvement in any one of whose branches tends to the greater perfection of the steam-vessel, or to reducing the expense of the accommodation afforded by her to the public, or to both these objects. Almost every great machine now in use was at first so inferior, that its first form would now be thrown aside with contempt,

From such a view only of the subject can we justly estimate the importance of *little things*.

Persons not much accustomed to such inquiries, and whose occupations are not connected with any walk of science or literature, frequently believe, with much sincerity, that learning and knowledge generally, except what directly bears on the particular pursuit of the individual, are useless. *Cui bono?* say they. Of what use is it? They are not aware that all branches are connected together, more or less intimately, and that the philosopher in his study is preparing employment for the operative man in the manufactory or workshop—that he is in fact contributing to the stock of comforts and benefits enjoyed by mankind. If a brewer, for example, had been shown 200 years ago a little coloured liquid moved up and down in a tube by the expansion or contraction of the air within, as the hand might be applied or removed, and had been told that at some time such an instrument might be found useful in his business, he would have thought the speaker mad. Yet this was the first thermometer, without which his business, and many others, could, at present, hardly be carried on. The indirect effect of observations and consequent discoveries, is indeed equal at least to their more immediate results. "The hand cannot say to the foot, I have no need of thee." Lemon-juice enables us to circumnavigate the globe. It is useless for navigation, but is found to be an effectual preventive of the sea scurvy. The discovery of preserving provisions fresh for a length of time by putting them ready-cooked into vessels from which air is excluded, is of nearly equal importance for the same purpose. Yet without the air-pump we should probably have remained without the latter. The observer of any physical fact, or the discoverer of any physical truth, cannot even guess what effect his labours may have on branches apparently the most remote*. The term star-gazer is, or was, one of popular ridicule; yet the art of the star-gazer, or astronomer, is essential to navigation, and consequently to commerce. But for his long-continued labours, seamen would be incapable of guiding their vessels over the ocean, and of thus exchanging the produce of one country for that of another. Many a rich merchant and manufacturer owe their fortunes to the star-gazer. The chronometer, the greatest present, next to the compass, ever made by science to navigation, is the child of star-gazing. And here one might fill a number of the 'Penny Magazine' in showing how many branches are required for the completion of the chronometer, and how many slight observations made by persons whose pursuits were wholly unconnected with that instrument have tended materially to its present state of excellence, and therefore to the extension of commerce. Yet as the visionary labours of the alchemists laid the foundation of modern chemistry, so astronomy was for ages supported and advanced solely for the purposes of still more visionary judicial astrology. So extraordinary is the course of human events!

Mining again, which contributes so largely both to the benefit of mankind and to the fortunes of individuals, depends for its success in rendering metals cheap and accessible on a host of little things operating through the numerous branches which bear upon it. The assayer, or practical chemist, ascertains the nature and qualities of mineral ores. The mineralogist, who goes round with his hammer in quest of specimens, as well as the scientific chemist, have however preceded him. As the study spreads and becomes popular, individuals in different districts set themselves to examine the minerals of their respective neighbourhoods. Should they travel, they still continue their researches. Thus discoveries are made, which would have escaped the mere miner, but which tend most materially to furnish employment for labourers, the means of accumulation to the frugal, and conveniences for all. "Deliver us from cobalt and spirits!" was once a miner's petition in the German liturgy. Copper-ore, under the name of *poder*, was within 200 years thrown away as refuse by the Cornish tinner. Manganese within thirty years past has been used in England for the repair of roads, while at the same time considerable quantities of it were being imported from Germany for the use of manufacturers. The scientific man has taught the miner to recognise and know the value of all these substances, and the latter no longer seeks to be delivered from them. The ores of various metals have indeed been discarded as rubbish by the working miner on many occasions. A mine is worked for a particular mineral. In the course of the operations some other mineral, more valuable perhaps than the original object of search, is discovered. Being unknown to the workman it is rejected with other waste. By-and-bye some mineralogist comes round picking up "bits of stone" here and there, and is astonished to find a valuable ore treated as refuse. On inquiry it turns out that the miners were ignorant of both its name and importance. In England the application of coal for smelting, and of steam for blast-furnaces, form two grand epochs in our mining history, yet from what slight circumstance did both originate!

Should an unreflecting person be asked what is the first step towards obtaining a loaf of bread, he would probably answer—"To get a shilling," or some equally inadequate reply would be given. The first step in reality is that a tree should be planted, either by the hand of nature or of man. Thence is obtained a material for the hoe or plough, and also for the miner, whose art, together with those of the carpenter, the smelter, the founder, the smith, the road-maker, the navigator, the natural historian, the chemist, the mineralogist, and finally the practical agriculturist, with many others, is essential to the production of good and cheap bread. Every little thing, therefore, which improves any one of these branches contributes so far towards the production of a loaf of bread.

Even those pursuits which appear to be most remote from the common arts of life and the employments of the operative labourer, often bear essentially thereon. Thus the classical scholar of the fifteenth and following centuries, by his labours in hunting out and preparing for the press dusty manuscripts, placed before mankind good editions of the ancient Greek and Latin authors. The perusal of these models was the commencement of modern civilization. It produced or fostered that state of mind which is favourable to an enlightened observation of the phenomena of nature, and to the cultivation of science generally. These have been already shown to be intimately connected with the common arts of life. The cultivation of letters also draws men off from warfare, once almost the only occupation of the rich, and gives them other pursuits. It leads nations to value the arts of peace: it tends, too, to explode those absurd prejudices which have so seriously injured mankind, and which too often arm them against each other and their own interest. To the formation of enlightened legislators the improvement of the mind through books and observation is essential; and it is almost needless to observe, that wise laws (among which must be included the absence or repeal of foolish ones) are indispensable to the profitable exercise of industry. The astronomer, again, by foretelling eclipses accurately, and by explaining the true nature of comets

* Berthollet in 1785 little anticipated that his discovery of a salt of potash would give rise to percussion locks. Equally unprepared was the chemist, who first observed a violet-coloured substance (iodine) in some experiments on sea-weed, to imagine that it would in a few years be considered important in medicine.

and other celestial phenomena, has helped to deliver men from those terrors so common in ignorant ages, and of which the serious practical effects are well known to every student of history. Even the antiquarian and the metaphysician also contribute their share of practical usefulness.

It may be instructive to enumerate, with a few comments, some of those *little things* which have had a marked influence on the destinies of mankind, and which have, by their consequences, changed for the better the course of human affairs.

That property of the loadstone by which it points north was discovered in the eleventh century. The observation of this apparently trifling matter has led to the whole course of modern navigation and maritime discovery. Neither American nor Australian colonies could have afforded a resource for a superabundant population but for this. Tea, coffee, sugar, tobacco, and how many other articles have been hereby rendered accessible to all classes, while nations have been enriched by the traffic in them! To take a higher view of the subject:—the way has thus been opened for sending missionaries, as the heralds of Christian truth and all its attendant blessings, to heathen nations.

The art of printing, probably the parent of more good than all others, owes its origin to rude impressions taken (for the amusement of children) from letters carved on the bark of a beech-tree. This was a slight matter, which thousands would have passed over with neglect.

Gunpowder was discovered from the falling of a spark on some materials mixed in a mortar; or perhaps we should rather say that artillery was the consequence of this spark, and the due observation of the circumstance. Some persons may not consider this discovery to be any great advantage. To this, however, aided by the arts of the miner, the founder, the chemist, the mathematician, and others, we owe that perfection of modern artillery which preserves Europe from the irruptions of barbarians, so fatally destructive during a long period, and by which her surface became almost a desert. Uncivilized warriors cannot long compete with artillery scientifically directed. Internal order has also been obtained by the same means, since no person, however powerful, can now hope to resist the government of his country, and make spoil of his peaceful neighbours; whereas, before the invention of artillery, great subjects often fortified their castles with success against their sovereign, and disturbed public order. The nobility of Europe at that time never abstained from warfare on each other, and consequent rapine, but at certain seasons, or on certain days of the week. Thus, by the change introduced through gunpowder, those pursuits have been protected which require security for their exercise, and to which we owe all the wealth and conveniences of modern times. Warfare, as it is now carried on between nations, is a trifling evil, when compared with the state of things before the invention of artillery.

The stupendous results of the steam-engine may all be traced (as noticed above) to an individual observing steam issuing from a bottle just emptied and placed casually close to a fire. He plunged the bottle-neck into cold water, and was intelligent enough to notice the instantaneous rush which ensued from this simple condensing apparatus.

Electricity was discovered by a person observing that a piece of rubbed glass, or some similar substance, attracted small bits of paper, &c. Galvanism again owes its origin to Madame Galvani's noticing the contraction of the muscle of a skinned frog, which was accidentally touched by a person at the moment of the professor, her husband, taking an electric spark from a machine. He followed up the hint by experiments. Pendulum clocks were invented from Galileo's observing the lamp in a church swinging to and fro. The telescope we owe to some children of a spectacle-maker placing two or more pairs of spectacles before each other, and looking through them at a distant object. The glimpse thus afforded was followed up by older heads. The barometer originated in the circumstance of a pump, which had been fixed higher than usual above the surface of a well, being found not to draw water. A sagacious observer hence deduced the pressure of the atmosphere, and tried quicksilver. The Argand lamp was invented by one of the brothers of that name having remarked that a tube held by chance over a candle caused it to burn up with a bright flame—an effect before unattainable, though earnestly sought after. Without the Argand lamp, light-houses (to pass over minor objects) could not be made efficient, and on the importance of these it is needless to dwell.

Every one can now appreciate the importance of the slight matters above referred to, because the great results are before the world. Yet we know that the observers of them were, for the most part, treated with ridicule or contempt at the time. We know also that any failure in similar experiments is too often regarded with malicious delight. Since such great discoveries have been made from the due observation of trifling accidents, we should encourage, instead of despising, those who notice the phenomena of nature under all circumstances, however unimportant some of them may appear. In the small building which was once Peter the Great's workshop in Holland, is the inscription "Nothing is too little for the attention of a great man."

It may be objected by the reader that these remarks relate to the cultivation of knowledge generally, of which he well knows the importance, and wonders to hear *little things* so much dwelt on. But it is plain that science and the arts depend for their progress on the observation of many small matters; on an attention to obscure and often trifling objects and occurrences; and that he who throws ridicule on these, does in effect, as far as his influence may extend, deprive men of the numerous advantages for both body and mind which the cultivation of knowledge affords.

Newspapers.—Plutarch notes that the country people were very busy in inquiring into their neighbours' affairs. The inhabitants of cities thronged the court and other public places, as the Exchange and Quays, to hear the news. The old Gauls were very great newsmongers; so much so, says Cæsar, that they even stopped travellers on this account, who deceived them, and thus brought error into their counsels. Juvenal notices the keenness of the Roman women for deluges, earthquakes, &c., as now, for wonders and private matters. Merchants and purveyors of corn, as now stock jobbers, used to invent false news for interested purposes. It was not uncommon to put the bearers of bad news to death. In the middle ages pilgrims and persons attending fairs were grand sources of conveying intelligence. Blacksmith's shops, hermitages, &c., were other resorts for this purpose, in common with the mill and market. Great families used to pay persons in London for letters of news. In London, as St. Paul's Church was the great place of advertising, so it was also for news. In Nichols's Progresses, a gentleman says, "that his lackey had not walked twenty paces in Pawles, before he heard that sundry friends of his master had taken leave at court, and were all shipt away." Servants were sent there on purpose to fetch news. Of the introduction of newspapers by the Gazetta of Venice everybody has read. Herbert calls the 'Siege of Rhodes,' by Caxton, "the antientest Gazette in our language:" but to prevent the mischief of false alarms, through the Spanish Armada, the first newspaper, styled 'The English Mercury,' then, as afterwards, in the shape of a pamphlet, appeared in the reign of Queen Elizabeth.—*Fosbroke.*

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